

**A version of the above amended claims marked to indicate the specific amendments may be found in the attached Appendix, in accordance with 37 CFR 1.121(c)(1).**

**REMARKS**

Claim 1 and 41 have been amended. Claims 1, 3-9 and 13-41 are in the application. Entry of this amendment, and reexamination and reconsideration of the present application are respectfully requested in light of the above amendments and the following remarks.

Claims 1 and 41 have been amended by adding the language "the engine comprising intake valves and exhaust valves, the engine being characterized by absence of a camshaft for controlling the timing and lift of the intake and exhaust valves, the intake and exhaust valves being electrically actuated, hydraulically actuated or electrohydraulically actuated during operation of said engine." Support for this amendment can be found in the applicants' specification at page 10, lines 4-12.

Claims 1, 3-9 and 13-41 have been rejected under 35 U.S.C. § 103(a) as unpatentable over Buehrle, II et al. (U.S. Patent 6,024,060) in view of Manka et al. (U.S. Patent 5,834,407). This rejection is respectfully traversed.

Buehrle, II et al. is cited in the applicants' specification as disclosing a camless internal combustion engine suitable for use with the applicants' claimed method (see, applicants' specification at page 17, line 26 to page 18, line 26). Buehrle, II et al. does not, however, provide any disclosure relating to the composition of any lubricating oil composition that might be used, and the reference certainly does not disclose or suggest a low-phosphorus or phosphorus-free lubricating oil composition as specified in the applicants' claims.

Manka et al. discloses a lubricating oil composition comprising a major amount of an oil of lubricating viscosity and a minor amount of certain heterocyclic compounds. The reference indicates that the lubricating oil composition may contain certain phosphorus-containing compounds (see, column 14, line 17 to column 22, line 14) and that the amount of phosphorus contributed to the lubricating composition by such

phosphorus-containing compounds may be "up to about 0.12% by weight... and in one embodiment up to about 0.08% by weight..." (see, column 28, lines 49-60). This reference does not disclose or suggest that the lubricating oil composition disclosed therein can be used in a camless internal combustion engine as specified in the applicants' claims.

Buehrle, II et al. discloses a camless engine but provides no information concerning the lubricating oil used in the engine. Manka et al. discloses a lubricating oil composition containing reduced levels of phosphorus, but the reduced levels disclosed therein can be as high as 0.12% by weight which exceeds the amount specified in the applicants' claims by 50%. Neither reference discloses or suggests operating a camless internal combustion engine using a phosphorus-free or low-phosphorus lubricating oil composition as specified in the applicants' claims. Neither reference provides the suggestion for combining the teachings of such references. It is respectfully submitted that the combination of references selected by the Examiner could only have been arrived at with the hindsight benefit of the applicants' disclosure.

In the Office Action the Examiner has indicated that in the applicants' previous arguments the term "a camless" has not been given patentable weight because the recitation occurs in the preamble. Applicants respectfully submit that by virtue of the above-indicated amendments to claims 1 and 41, the inventive method involving the operation of a camless engine has been defined more specifically by indicating that the engine is characterized by the absence of a cam shaft for controlling the timing and lift of the intake and exhaust valves, and the intake and exhaust valves are electrically actuated, hydraulically actuated or electrohydraulically actuated during operation of the engine. These limitations clearly define the operation of a camless engine and are entitled to patentable weight as they do not appear in the preamble.

In the Office Action the Examiner states that he "recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, it would

have been obvious to one having ordinary skill in the art at the time the invention was made to employ the low-phosphorus lubricating oil composition in the camless engine in order to reduce wear, noise and emissions." Applicants respectfully submit that the foregoing conclusion represents nothing more than hindsight speculation on the part of the Examiner, not evidence that one of ordinary skill in the art would have been motivated by the teachings in Buehrle, II et al. and Manka et al. to combine their teachings to arrive at the applicants' claimed invention. Moreover, both *In re Fine* and *In re Jones* cited above favor the applicants' position. In both cases, holdings of obviousness by the PTO were reversed by the Federal Circuit.

In the case of *In re Fine*, the Federal Circuit stated (5 USPQ2d at pages 1599-1600):

[2] Obviousness is tested by "what the combined teachings of the references would have suggested to those of ordinary skill in the art." ... it "cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination." . . . And "teachings of references can be combined *only* if there is some suggestion or incentive to do so." . . . Here, the prior art contains none.

Instead, the Examiner relies on hindsight in reaching his obviousness determination. But this court has said, "To imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art reference or references of record convey or suggest that knowledge, is to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher." . . . One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.

In the present case neither Buehrle, II et al. nor Manka et al. provide any suggestion or incentive for combining their teachings. Instead, the Examiner has relied upon hindsight in reaching his obviousness determination. Accordingly, the rejection should be withdrawn.

The Federal Circuit in *In re Jones* followed the precedent established in *In re Fine* by stating: (21 USPQ2d at page 1943-4):

Before the PTO may combine the disclosures of two or more prior art references in order to establish *prima facie* obviousness, there must be some suggestion for doing so, found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. *In re Fine*, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598-99 (Fed. Cir. 1988). We see no such suggestion in Zorayan, which is directed to shampoo additives, nor in Wideman, which teaches that the amine used to make the claimed compound is a byproduct of the production of morpholine. Nor does the broad disclosure of Richter fill the gap, for the reasons discussed above.

Conspicuously missing from this record is any *evidence*, other than the PTO's speculation (if it be called evidence) that one of ordinary skill in the herbicidal art would have been motivated to make the modifications of the prior art salts necessary to arrive at the claims 2-(2'-aminoethoxy) ethanol salt.

As was the case in *In re Jones*, conspicuously missing from this record is any evidence, other than the Examiner's speculation, that one of ordinary skill in the camless engine or lubricating oil arts would have been motivated to employ a low-phosphorus or phosphorus-free lubricating oil composition in a camless engine as specified in the applicants' claims. Absent such evidence the rejection should be withdrawn.

Applicants respectfully submit that the application is now in condition for allowance. A Notice of Allowance is respectfully requested. In the alternative, entry of the amendment is respectfully requested for purposes of an appeal.

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**APPENDIX - - Amendment Version With Markings to Show Changes Made**

Claims 1 and 41 have been amended as follows:

1. (Amended) A method of operating a camless internal combustion engine, comprising:

(A) operating said engine using a normally liquid or gaseous fuel composition, the engine comprising intake valves and exhaust valves, the engine being characterized by absence of a camshaft for controlling the timing and lift of the intake and exhaust valves, the intake and exhaust valves being electrically actuated, hydraulically actuated or electrohydraulically actuated during the operation of said engine; and

(B) lubricating said engine using a low-phosphorus or phosphorus-free lubricating oil composition, said low-phosphorus or phosphorus-free lubricating oil composition optionally containing an extreme-pressure additive comprised of metal and phosphorus, provided the amount of phosphorus contributed to said low-phosphorus or phosphorus-free lubricating oil composition by said extreme-pressure additive does not exceed about 0.08% by weight based on the weight of said low-phosphorus or phosphorus-free lubricating oil composition.

41. (Amended) A method of operating a camless internal combustion engine, comprising:

(A) operating said engine using a normally liquid hydrocarbon fuel composition, the engine comprising intake valves and exhaust valves, the engine being characterized by absence of a camshaft for controlling the timing and lift of the intake and exhaust valves, the intake and exhaust valves being electrically actuated, hydraulically actuated or electrohydraulically actuated during the operation of said engine; and

(B) lubricating said engine using a low-phosphorus or phosphorus-free lubricating oil composition, said low-phosphorus or phosphorus-free lubricating oil composition comprising an acylated nitrogen-containing compound having a substituent of at least about 10 aliphatic carbon atoms; said low-phosphorus or phosphorus-free lubricating oil composition optionally containing an extreme-pressure additive comprised

of metal and phosphorus, provided the amount of phosphorus contributed to said low-phosphorus or phosphorus-free lubricating oil composition by said extreme-pressure additive does not exceed about 0.08% by weight based on the weight of said low-phosphorus or phosphorus-free lubricating oil composition.